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PATENT SPECIFICATION

756,882



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COMPLETE SPECIFICATION

Hair Cutter or Hair Shaver

I, ABRAHAM NATHANIEL SPANEL, a citizen of the United States of America, of Stockton Street, City of Princeton, County of Mercer, New Jersey, United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention relates to hair cutters or hair shavers and is an improvement in or modification of the invention claimed in Patent No. 697,098.

I have found that a blade edge enclosed within a cage is at all times prevented from accidental contact with the skin. When it is desired to dispose of the cage tines entirely on one side of the blade, then the open side of the cage represents a hazard for the careless user of the hair cutter, and the present invention is concerned with a hair cutter having an open-sided cage.

The term "shaving" is used herein as applicable to a hair cutter when it is desired to cut the hair as close as possible to the skin, as, for example, at the back of the head at the neck line.

Accordingly, one of the objects of my invention is to provide a hair cutter which will permit the blade edge to advance to or beyond the outer extremities of the cage tines, and at the same time provide the blade edge with a guard which will protect the careless user in all positions of the movable blade. Further objects are to provide such a guard which will not interfere with the movement of hair through the hair cutter, and which may be easily made of inexpensive materials, and quickly secured to an existing hair cutter according to the said Patent.

Still other objects are to provide a hair cutter body made of moulded material, and having moulded passageways to facilitate passage of the hair; to provide a wheel type of driving means with exposed portions of the rim to facilitate movement of the blade; and to provide a novel spac-

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ing of the cage tines and guard teeth to permit close shaving in a safe position.

According to the present invention, a hair cutter as claimed in Patent No. 697,098, and comprising a blade-position-fixing means and a cage, which includes a frame from which a plurality of spaced-apart tines are disposed entirely on one side of the positioned blade, said cage and position-fixing means being relatively adjustable to effect relative transverse movement between the positioned blade and the cage tines is characterised by a guard mounted on the blade-position-fixing means and forming an obstacle against accidental contact with the edge of the blade in any of its transverse positions relative to the cage. Preferably the guard is formed with teeth providing a passage-way for the hair, and comprises sheet material stamped to form ears in the region of the blade edge.

A hair cutter according to the invention, is illustrated by way of example on the accompanying drawings wherein:—

Fig. 1 is a plan view of my hair cutter;

Fig. 2 is a cross-sectional view through 2—2 of Fig. 1;

Fig. 3 is a longitudinally sectioned view through 3—3 of Fig. 1;

Fig. 4 is a plan view of a sheet metal guard;

Fig. 5 is an end view thereof;

Fig. 6 is a plan view of an embodiment in which the guard teeth are formed of wire;

Fig. 7 is an end view thereof;

Fig. 8 is a plan view of a sheet metal embodiment;

Fig. 9 is an end view thereof;

Fig. 10 is a partial cross-sectional view, illustrating a guard in advanced position;

Fig. 11 is a partial cross-sectional view, illustrating a protected end of a sheet metal frame with integral teeth.

In the drawing reference numeral 10 designates my hair cutter comprising a cage 12, extending handle 14, and blade position fixing means which includes the blade adjusting dial or wheel 16, the blade

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supporting plate 18, the blade clamp 20, the blade 22, and associated parts herein-after described.

A two edge hair cutter for using either 5 of the edges of a double edged blade is illustrated of the open cage type; but it will be understood that a single edge hair cutter may be provided.

In the particular construction illustrated, 10 the cage may be made of plastic, such as nylon, which is exceptionally strong, and capable of being moulded into the intricate comb shape with various recesses, as hereinafter described. Other plastics may 15 also be used; or the device may be made of metal, if desired.

The blade is preferably supported on the cage having a hollow compartment 24, which is determined by the angle which 20 the teeth form with the side 25 of the positioned blade. Hair of sufficient length may be combed into position between the individual tines 26 and into the hollow compartment until it engages the edge 28 25 of the blade which is selectively positioned by the dial. The positioning of the blade is provided for by blade position fixing means in the following manner: The blade supporting plate operates in guideways 30 and 30 32 formed in the cage adjacent each end of the blade supporting plate. Positioned along one end of the blade supporting plate, and operating in the guideway 32 is a rack 34, operable by the pinion edge 35 35 of the dial 16 supported on shaft 36. The underside of the dial may be radially notched as at 37 to engage spring 38 mounted to the cage to prevent unintended motion of the blade. The handle is recessed 40 as at 39 to accommodate the dial and permit engagement with the rack of the blade supporting plate. A cover plate 40 secured to the handle by pins 41 completes the assembly.

45 Thus the dial may effect a relative transverse movement between the edge of the blade and the ends of the cage tines throughout the cutting edge zone, namely from a position wherein the cutting edge 50 is in close proximity to the outermost edge of the cage tines to one wherein the cutting edge is spaced its maximum distance from the scalp, and from the inner surface of the cage tines; as shown in Fig. 2.

55 The hollow clamp 20 contains a plate 21 made of springy metal provided with key slots 42 which engage the respective necks 44 of the headed posts 46 mounted to the blade supporting plate 18. An external finger piece 48 extends through the hollow clamp 20 and is secured to the plate 21, as by riveted post 49 which enables 60 the plate to be moved in the hollow clamp until the headed pins are freed in the key 65 slots. Thus the clamp may be lifted for

changing the blade positioned on the blade supporting plate underneath.

The cage 12 supports the extending tines by means of the spine or frame 50 which is undercut between cage tines 26 in the 70 form of grooves providing passageways 52, to prevent the tendency of the frame to flatten the hair against the scalp, for example, and thus interfere with the most efficient operation of the device.

75 It will be readily seen that the blade in the open type of hair cutter having tines disposed on only one side of the blade and employing the hollow compartment, exposes its edge throughout its length. As the edge of the blade is propelled towards the ends of the cage tines through the cutting zone for the close cut, the danger of accidental injury is somewhat lessened. To protect the user from the exposed edge of the blade in the open compartment, a guard is provided which travels with the blade.

80 In Figs. 1, 2 and 3, I have illustrated the hollow clamp 20 provided with slots 53 along the edge of the blade forming projections 54 which act as an obstacle to 85 wards accidental contact of the fingers or skin with the edge of the blade.

85 In Figs. 4 and 5, I have illustrated a combined clamping plate and guard 56 made of stamped sheet metal and, if desired, a relatively hollow section 58 which may provide a springy clamping action, 90 with key slots 60 to receive the headed clamping posts. The two longitudinal edges are slit as at 62 to permit upraised sheet metal ears 64 forming an obstacle against accidental contact with the skin, while allowing the cutting edge on both sides of the blade to be engaged by the hair. The ears may have their outer extremities curved as at 65 to provide a supporting surface for the skin when the guard is in 95 a position for shaving. The finger piece 66 facilitates manipulation of the guard.

100 In Figs. 6 and 7, I have illustrated an embodiment of my clamping plate 56a made of a sheet metal and if desired a relatively hollow section 58a, and key slots 60a. A sheet metal cap 59a is provided with wire guard teeth 64a which may be rounded at the ends thereof and extend over the blade forming a guard contiguous 105 with the edges of the said blade.

110 In Figs. 8 and 9, I have illustrated a combined sheet metal clamping plate 56b in which extending fingers 64b extend from each side thereof which may curl upward, as illustrated, or curve downward towards the razor edge.

115 I have found that the obstacle to accidental contact with the edge of the blade is greater as the guard approaches the edge of the blade. For maximum protection, I 120

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have found the guard should project over the edge of the blade, as appears from the sectional view illustrated in Fig. 10.

A safety position for hair shaving occurs 5 in the hair cutter with suitably spaced apart tines and with the guard in its advanced position, when the edge 68 of the blade presses the skin in the plane of use determined by the cage tines 70 and guard 10 72, as is illustrated in Fig. 10.

When a cage having suitable spaced-apart tines is pressed against the skin having hair thereon, the skin is depressed by adjacent tines causing the skin surface to 15 be raised therebetween. I have utilized this phenomenon to enable the blade edge to engage the raised skin in a shaving position, as was originally provided for in the closed type of hair cutter, i.e. one in which 20 the cage encircles the edge of the blade. In such a hair cutter, the tines were spaced 1/8 inch apart and had a thickness of from .015" to .030". Increasing the spacing between the tines decreases the safety factor; and increasing the thickness of the 25 tines, makes it more difficult for the blade edge to reach the shaving position. A proper balance between the spacing and wire thickness is here preferred.

30 I thus avoid the necessity for advancing the blade edge to an unsafe and exposed position beyond the ends of the cage tines.

In the device according to the invention having a movable guard, the teeth of the 35 guard are preferably similarly spaced to ensure this new and safe shaving position wherein the blade edge may be maintained in the plane of use between the outermost surfaces of the guard and the cage tines, 40 as shown in Fig. 10. In such case the skin is depressed under the tines and/or the guard and thereby raised in between the teeth to reach the safe shaving position of the blade edge.

45 It is obvious that several strokes of the hair cutter may be desired in the hair shaving area to insure that all the hair intended for removal has been shaved.

In Fig. 11, a I have illustrated a sectional view of the sheet metal frame 74 with integral extending teeth 76, the sharpness of the ends of the teeth being checked by merely coining or "balling" the points, as at 78.

55 In order to insure that the blade edge can be quickly moved to the hair shaving position, the hair cutter may be provided with a stop. Such a stop may be molded in the hair cutter guideway, as for instance the stop 88 in Fig. 1.

In the foregoing, I have described a hair cutter having an exposed blade for close hair cutting or so-called close shaving of the hairs which at all times is furnished 60 with a guard acting as an obstacle to acci-

dental contact with the edge of the blade. The guard is provided with teeth to permit the hair to reach the edge of the blade throughout its various positions. The ends of the guard teeth may be spaced from the edge of the blade to avoid accumulating the cut hair. The proper spacing of the teeth of the hair cutter permits the blade edge to be advanced with the guard to the safety position for close shaving. The hair cutter is at all times protected from damage to the blade edge and the blade edge guarded against accidental contact therewith. The guards may be moulded, stamped or made of wire or combinations thereof. 70 75 80

My novel hair cutter employing the wheel drive positioned parallel to the plane of the blade is flatter and easier to operate than other types. The thumb and forefinger or either of them, on the same hand, are in a natural position for easily operating the wheel. 85

I desire it to be understood that the invention is not confined to the particular forms shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from its scope as defined by the appended claims. 90

What I claim is:— 95

1. An improvement in or modification of the hair cutter as claimed in Patent No. 697,098 comprising a blade-position-fixing means and a cage which includes a frame from which a plurality of spaced-apart tines are disposed entirely on one side of the positioned blade, said cage and position-fixing means being relatively adjustable to effect relative transverse movement between the positioned blade and the cage tines, characterised by a guard mounted on the blade-position-fixing means and forming an obstacle against accidental contact with the edge of the blade in any of its transverse positions relative to the cage. 100 105 110

2. A hair cutter according to claim 1, characterised by the fact that the guard is formed with teeth providing a passage-way for the hair. 115

3. A hair cutter according to Claims 1 or 2, characterised by the fact that the guard is made of sheet material stamped to form ears in the region of the blade edge. 120

4. A hair cutter according to Claims 1 or 2, characterised by the fact that the guard comprises outwardly projecting wires formed into a loop in the region of the blade edge. 125

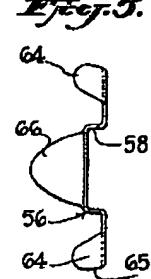
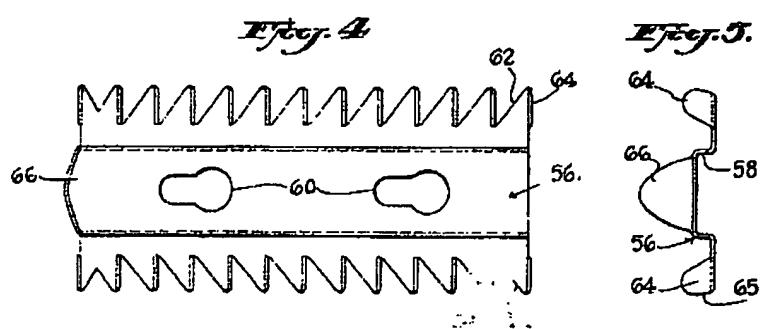
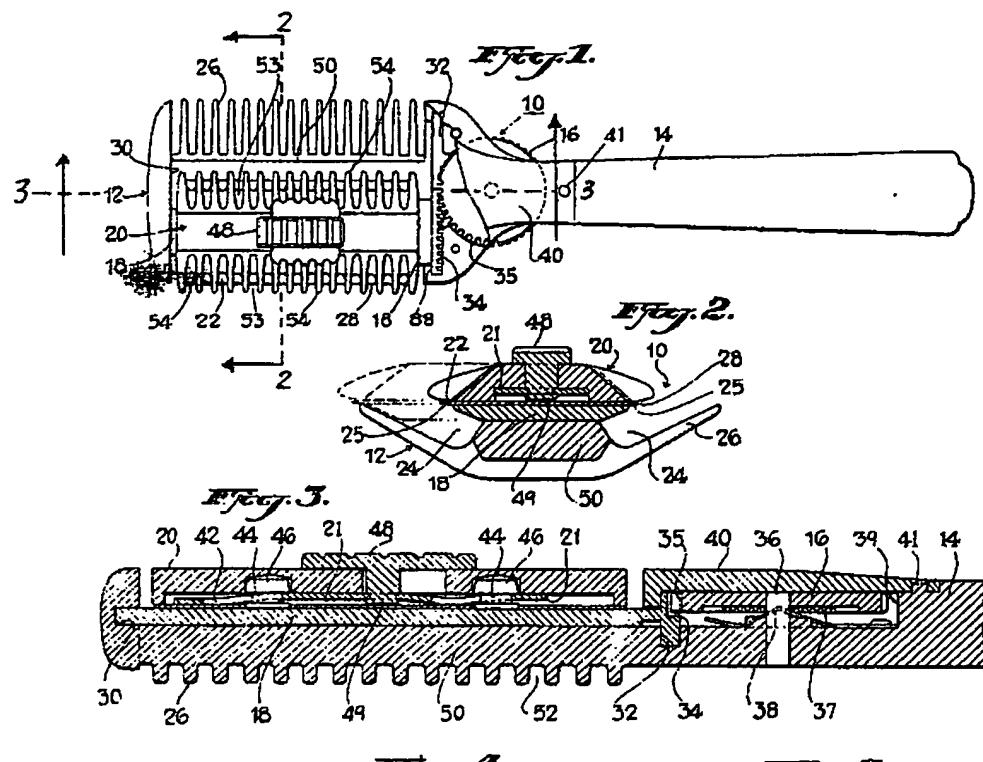
5. A hair cutter according to Claims 1 or 2, characterised by the fact that the guard includes outwardly projecting fingers, the ends of which are rounded and preferably enlarged. 130

6. A hair cutter according to any one

- of the preceding claims, characterised by the fact that the guard projects beyond the edge of the blade, and the outermost portions of the guard are in the plane of use determined by the cage tines and blade edge.
7. A hair cutter according to any one of the preceding claims, characterised by a circular wheel for operating the blade-position-fixing means and positioned in a plane parallel to the positional blade and between the cage and a handle, said wheel having edge portions exposed for engagement by the fingers.
- 10 8. A hair cutter according to any one
- of the preceding claims, characterised by the fact that the cage frame is made of moulded material, and the space between the cage tines is continued through the frame in the form of grooves providing a substantially continuous open passageway for the hair substantially as and for the purpose described.
9. A hair cutter substantially as described with reference to or as illustrated by the accompanying drawings.

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2 SHEETS This drawing is a reproduction of
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SHEETS 1 & 2

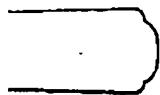


Fig. 6.

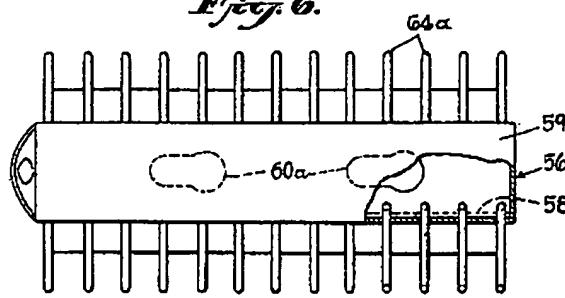


Fig. 7.

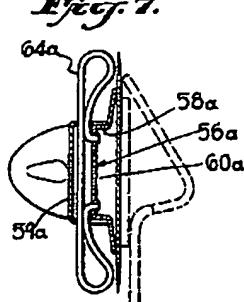


Fig. 8.

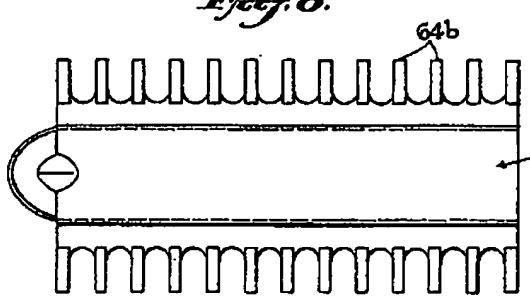
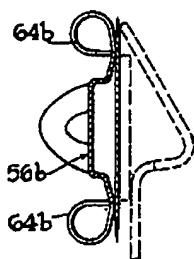


Fig. 9.



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Fig. 5.

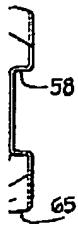


Fig. 10.

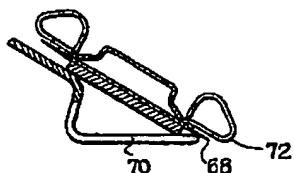
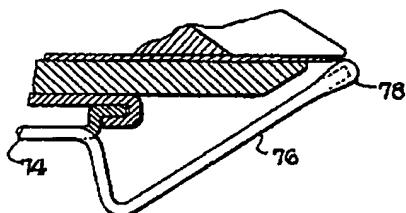


Fig. 11.



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2 SHEETS This drawing is a reproduction of
the Original on a reduced scale.
SHEETS 1 & 2

